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EXAMINER
BHAT, ADITYA S

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/014,626	HAMZA, RIDHA M.
	Examiner	Art Unit
	Aditya S. Bhat	2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 23 September 2005.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-28,30,32 and 33 is/are pending in the application.

4a) Of the above claim(s) 29 and 31 is/are withdrawn from consideration.

5)☒ Claim(s) 3-8 and 13 is/are allowed.

6)☒ Claim(s) 1,2,9-12,14-28,32 and 33 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 October 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 9-12, 14-28, 30, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Corrado et al. (USPN 5,890,085)

With regards to claim 1, Corrado et al. (USPN 5,890,085) teaches a system to determine a most likely position of a moving inanimate, said system comprising

a plurality of sensors each providing a location of the moving inanimate object with an associated sensor uncertainty distribution; (Refer to figure 23) and

a data processor configured to read location data from two or more sensors wherein said data processor combines the location data and the associated sensor uncertainty distributions from said two or more sensors and generates a value indicative of the most likely position of the moving inanimate object. (Refer to figure 14)

With regards to claim 2, Corrado et al. (USPN 5,890,085) teaches the associated sensor uncertainty distribution is dependent on one or more performance characteristics for the sensor. (Col. 4, lines 19-23)

With regards to claim 9, Corrado et al. (USPN 5,890,085) teaches the data processor is configured to determine a probability distribution for a position of the object

based on the location data and the associated sensor uncertainty distribution from each of the at least two sensors. (Refer to figure 20-21)

With regards to claim 10, Corrado et al. (USPN 5,890,085)teaches each probability distribution for the position of the object includes a value indicating a likely position of the object. (Refer to figure 20-21)

With regards to claim 11, Corrado et al. (USPN 5,890,085)teaches each probability distribution for the position of the object is segmented into a plurality of sub-ranges. (Refer to figure 20-21)

With regards to claim 12, Corrado et al. (USPN 5,890,085)teaches each sub-range has an associated probability value indicative of the likely position of the object within the sub-range. (Refer to figure 20-21)

With regards to claim 14, Corrado et al. (USPN 5,890,085)teaches the probability distributions for the position of the object have common sub-ranges. (Refer to figure 20-21)

With regards to claim 15, Corrado et al. (USPN 5,890,085) teaches a conjunctive fusion method is applied to a plurality of parameters affecting sensor reliability said method providing an estimation of intersection points of probability measures by identifying the sub-range with the most likely probability of defining the objects position (Refer to figure 20-21)

With regards to claim 16, Corrado et al. (USPN 5,890,085)teaches each sensor indicates a likely position of the object; each sensor yields an associated probability distribution for the position of the object; (Refer to figure 23) and each probability

distribution for the position of the object is separated into a plurality of sub-ranges, said sub-ranges being applied to each probability distribution for the position of the object. (Refer to figure 20-21)

With regards to claim 17, Corrado et al. (USPN 5,890,085)teaches each sub-range, the probability values associated with each sensor are manipulated using statistical means to generate a value indicative of the most likely position of the object and an associated probability distribution for the most likely position of the object. (Refer to figure 20-21)

With regards to claim 18, Corrado et al. (USPN 5,890,085) teaches that the system is adapted for optimizing the distance between objects. (Refer to figure 1-8)

With regards to claim 19, Corrado et al. (USPN 5,890,085) teaches adapted for tracking the relative location of a plurality of objects. (Refer to figure 3-5)

With regards to claim 20, Corrado et al. (USPN 5,890,085)teaches the plurality of sensors includes a plurality of radar systems. (24, 26; Refer to figure 14)

With regards to claim 21, Corrado et al. (USPN 5,890,085)teaches the plurality of sensors includes a plurality of beacon systems. (24, 26; Refer to figure 14)

With regards to claim 22, Corrado et al. (USPN 5,890,085) teaches a global a system to determine a global position of one or more moving inanimate objects said system comprising:

a plurality of local systems with each local system providing a value indicative of the most likely position of the moving inanimate object;(Refer to figure 1-8)

wherein each of the local systems includes

a plurality of sensors each providing a location of the moving inanimate object with an associated sensor uncertainty distributions to generate a value indicative of the most likely position of object; (Refer to figure 23)

wherein each of the local systems transmits the values indicative of the most likely position of the moving inanimate object to a central processing center that determines the global position of the one or more moving inanimate objects. (Refer to figure 23)

With regards to claim 23, Hibino et al. (USPN 5,510,990 teaches each local system provides a probability distribution for the most likely position of the object. (Refer to figure 20-21)

With regards to claim 24, Corrado et al. (USPN 5,890,085)teaches a method for determining a most likely position of a moving inanimate object, said method comprising:

receiving location data and an uncertainty distribution for the moving inanimate object from each of a plurality of sensors; (Refer to figure 23)

combining the location data and the uncertainty distributions from the plurality of sensors; (col. 7 lines 48-52)

generating a value indicative of the most likely position of the moving inanimate object based on the combined location data and uncertainty distributions; and

(Refer to figure 20)

generating a probability distribution for the most likely position of the moving inanimate object based on the combined location data and uncertainty distributions. (Refer to figure 23)

With regards to claim 25, Corrado et al. (USPN 5,890,085)teaches a

a plurality of sensors, each sensor indicating a likely position of the object and each sensor yielding an associated probability distribution for the position of the object; (Refer to figure 23)

segmenting each probability distribution for the position of the object into a plurality of sub-ranges, said sub-ranges being identically applied to each probability distribution for the position of the object; (Refer to figure 21) and

each sub-range having a probability value and an associated probability distribution for the position of the object. (Refer to figure 21)

With regards to claim 26, Corrado et al. (USPN 5,890,085)teaches using statistical means to manipulate the associated probability values for each sub-range and generating a value indicative of the most likely position of the object. (Refer to figure 20-21)

With regards to claim 27, Corrado et al. (USPN 5,890,085)teaches using statistical means to manipulate the associated probability values for each sub-range and generating a probability distribution for the most likely position of the object. (Refer to figure 21)

With regards to claim 28, Corrado et al. (USPN 5,890,085)teaches method to determine a most likely global position of an object, said method comprising the steps

of: receiving from a plurality of local systems a data on the most likely position of the object; (Refer to figure 23)

combining the data from the plurality of local systems; (66;Refer to figure 13)

generating a value indicative of the most likely global position of the object based on the data from the plurality of local systems; (Refer to figure 20)

wherein at least selected local systems include two or more sensors wherein each sensor provides location data and a probability distribution for the object, wherein the at least selected local systems combine the location data and the probability distribution from at least two of the two or more sensors and provide combined local location data and a combined local probability distribution for the object, the combining step combining the combined local location data and the combined local probability distributions from at least selected local systems and generating a value indicative of the most likely global position of the object. (Refer to figure 23)

With regards to claim 30, Corrado et al. (USPN 5,890,085)teaches at least two of the local systems are physically spaced from one another. (Refer to figure 1-8)

With regards to claim 32, Corrado et al. (USPN 5,890,085)teaches a method for determining a most likely global position of an object, said method comprising:

providing two or more local systems, wherein each local system includes at least one sensor that provides location data and a probability distribution for the object; (Refer to figure 1-8) (Refer to figure 23) and

combining the location data (80; Refer to figure 14) and the probability distribution from at least selected local systems to generate a value indicative of the most likely global position of the object.(Refer to figure 18)

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 9-12, 14-21, 24, 26-27, and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Nehls III (USPUB 2002/0120391)

With regards to claim 1, Nehls III (USPUB 2002/0120391) teaches a system to determine a most likely position of a moving inanimate object, said system comprising

a plurality of sensors (202; Refer to figure 8) each providing a location of the moving inanimate object with an associated sensor uncertainty distribution; (206; Refer to figure 8) and

a data processor (60;Page 2, Paragraph 0014) configured to read location data from two or more sensors wherein said data processor combines the location data and the associated sensor uncertainty distributions from said two or more sensors and generates a value indicative of the most likely position of the moving inanimate object. (Page 2, Paragraph 0014)

With regards to claim 2, Nehls et al. (USPUB 2002/0120391) teaches the associated sensor uncertainty distribution is dependent on one or more performance characteristics for the sensor. (Page 2, Paragraph 0014)

With regards to claim 9, Nehls et al. (USPUB 2002/0120391) teaches the data processor is configured to determine a probability distribution for a position of the object based on the location data and the associated sensor uncertainty distribution from each of the at least two sensors. (Page 2, Paragraph 0014)

With regards to claim 10, Nehls et al. (USPUB 2002/0120391) teaches each probability distribution for the position of the object includes a value indicating a likely position of the object. (Page 2, Paragraph 0014)

With regards to claim 11, Nehls et al. (USPUB 2002/0120391) teaches each probability distribution for the position of the object is segmented into a plurality of sub-ranges. (Page 2, Paragraph 0017)

With regards to claim 12, Nehls et al. (USPUB 2002/0120391) teaches each sub-range has an associated probability value indicative of the likely position of the object within the sub-range. (Page 2, Paragraph 0017)

With regards to claim 14, Nehls et al. (USPUB 2002/0120391)teaches the probability distributions for the position of the object have common sub-ranges. (Page 2, Paragraph 0017)

With regards to claim 15, Nehls et al. (USPUB 2002/0120391) teaches a conjunctive fusion method is applied to a plurality of parameters affecting sensor reliability said method providing an estimation of intersection points of probability

measures by identifying the sub-range with the most likely probability of defining the objects position (Page 2, Paragraph 0014)

With regards to claim 16, Nehls et al. (USPUB 2002/0120391) teaches each sensor indicates a likely position of the object; each sensor yields an associated probability distribution for the position of the object; and each probability distribution for the position of the object is separated into a plurality of sub-ranges, said sub-ranges being applied to each probability distribution for the position of the object. (Page 2, Paragraph 0014)

With regards to claim 17, Nehls et al. (USPUB 2002/0120391) teaches each sub-range, the probability values associated with each sensor are manipulated using statistical means to generate a value indicative of the most likely position of the object and an associated probability distribution for the most likely position of the object. (Page 2, Paragraph 0013)

With regards to claim 18, Nehls et al. (USPUB 2002/0120391) teaches that the system is adapted for optimizing the distance between objects. (Page 1, Paragraph 0011)

With regards to claim 19, Nehls et al. (USPUB 2002/0120391) teaches adapted for tracking the relative location of a plurality of objects. (Page 1, Paragraph 0011)

With reference to claims 18 and 19, it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ 138. CAPABLE OF it has been held that the recitation that an

element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ . 138.

With regards to claim 20, Nehls et al. (USPUB 2002/0120391) teaches the plurality of sensors includes a plurality of radar systems. (Page 1, Paragraph 0012)

With regards to claim 21, Nehls et al. (USPUB 2002/0120391) teaches the plurality of sensors includes a plurality of beacon systems. (Refer to figure 1)

With regards to claim 24, Corrado et al. (USPN 5,890,085)teaches a method for determining a most likely position of a moving inanimate object, said method comprising:

receiving location data and an uncertainty distribution for the moving inanimate object from each of a plurality of sensors; (Page 2, Paragraph 0014)

combining the location data and the uncertainty distributions from the plurality of sensors; (Page 2, Paragraph 0014)

generating a value indicative of the most likely position of the moving inanimate object based on the combined location data and uncertainty distributions; and (Page 2, Paragraph 0016)

generating a probability distribution for the most likely position of the moving inanimate object based on the combined location data and uncertainty distributions. (Page 2, Paragraph 0013)

With regards to claim 33, Nehls et al. (USPUB 2002/0120391) teaches a system for determining a most likely position of an aircraft in an airspace(Page 1, Paragraph 0011), said system comprising:

a plurality of sensors each providing a location of the aircraft with an associated sensor uncertainty distribution, wherein for each sensor, the associated sensor certainty distribution is dependent on one or more performance characteristics for that sensor; (Page 2, Paragraph 0014)

a data processor(60;Page 2, Paragraph 0014) configured to read location data from two or more sensor wherein said data processor combines the location data and the associated sensor uncertainty distributions from said two or more sensors and generates a value indicative of the most likely position of the aircraft (Page 2, Paragraph 0014)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 22-23, 28, 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nehls et al. (USPUB 2002/0120391).

With regards to claim 22, Nehls et al. (USPUB 2002/0120391) teaches a global a system to determine a global position of one or more moving inanimate objects said system comprising:

providing a value indicative of the most likely position of the moving inanimate object; (Page 2, Paragraph 0014)

wherein each of the local systems includes

a plurality of sensors each providing a location of the moving inanimate object with an associated sensor uncertainty distribution to generate a value indicative of the most likely position of moving inanimate object; (Page 2, Paragraph 0014)

transmitting the values indicative of the most likely position of the moving inanimate object to a central processing center that determines the global position of the one or more moving inanimate objects. (Page 2, Paragraph 0014)

With regards to claim 23, Nehls et al. (USPUB 2002/0120391) teaches providing a probability distribution for the most likely position of the object. (Page 2, Paragraph 0014)

With regards to claim 28, Nehls et al. (USPUB 2002/0120391) teaches method to determine a most likely global position of an object, said method comprising the steps of;

receiving data on the most likely position of the object; (Refer to figure 8)

combining the data; (Refer to figure 8)

generating a value indicative of the most likely global position of the object; (Refer to figure 8)

wherein at least selected local systems include two or more sensors wherein each sensor provides location data and a probability distribution for the object, wherein the at least selected local systems combine the location data and the probability distribution from at least two of the two or more sensors and provide combined local location data and a combined local probability distribution for the object, the combining step combining the combined local location data and the combined local probability distributions and generating a value indicative of the most likely global position of the object. (Refer to figure 8)

With regards to claim 30, Nehls et al. (USPUB 2002/0120391) teaches at least two of the systems are physically spaced from one another. (Refer to figure 1)

With regards to claim 32, Nehls et al. (USPUB 2002/0120391) teaches a method for determining a most likely global position of an object, said method comprising:

at least one sensor that provides location data and a probability distribution for the object; (Page 2, Paragraph 0014)

combining the location data and the probability distribution to generate a value indicative of the most likely global position of the object.(Refer to figure 8)

Nehls et al. (USPUB 2002/0120391) discloses the claimed invention except for a plurality local system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a plurality local system since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter: Claims 3-8, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for allowance were previously indicated.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments filed 9/23/05 have been fully considered but they are not persuasive.

Applicant argues that the prior art of record does not teach a moving inanimate object (Col. 11, lines 60-65) and goes on to argue that no teaching of a local system is found in the prior art of record. Applicant goes on to argue that this interpretation of a system would be directed to determining the presence of a different object in a different car seat. It should be noted that the term 'local' is a relative term and therefore interpreted as such.

Although the Corrado reference does not explicitly state that the inanimate object is moving, the claimed invention does not explicitly state in relation to what the inanimate object is moving. Broadly interpreted the claim would read on the Corrado

reference since the inanimate object would be inside a moving vehicle and therefore be moving itself.

With regards to the local system, applicant argues that there is no teaching of a local system in the prior art of record. The Corrado et al. reference teaches both infrared (21a,21b;Col.14, line 50) and ultrasound (25;Col.14, line 50) for detecting the position of one person/object in a seat. Therefore the combination of the infrared sensors and the ultrasound sensors could be interpreted as multiple systems.

For the aforementioned reasons the rejection is deemed proper.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Maren et al. (USPN 5,850,625) teaches a sensor fusion apparatus and method and Dickson et al. (USPN 6,445,983) teaches sensor fusion navigator for automated guidance of off road vehicles.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S Bhat whose telephone number is 703-308-0332. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Aditya Bhat
November 28, 2005

MICHAEL NGHIEM
PRIMARY EXAMINER